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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/837,552

04/19/2001

Hisashi Ohtani

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01/30/2003

NIXON PEABODY, LLP
8180 GREENSBORO DRIVE
SUITE 800
MCLEAN, VA 22102

EXAMINER

RICHARDS, N DREW

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 01/30/2003

22

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/837,552

Applicant(s)

OHTANI ET AL.

Examiner

N. Drew Richards

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28-43, 45, 47 and 48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28, 29 and 34-36 is/are allowed.
- 6) ☒ Claim(s) 30-33, 37-41, 45, 47 and 48 is/are rejected.
- 7) ☒ Claim(s) 42 and 43 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 08 November 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 16, 17.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. It is noted that in amendment C filed 11/4/02, the marked up version of claims 30, 33, 37 and 40 do not correspond to the changes made from the original claims to obtain the claims as submitted in the clean copy of the claims. The claims as presented in the clean copy of the claims in amendment C are being examined in this office action.
2. The substitute specification filed 12/17/02 has been entered.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 30-33, 37-40, 47 and 48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 30 and 37 recite structures for the second wiring line including a first and second conductive layer and a third conductive layer in lines 5-7. The claim is indefinite as it is unclear whether the second wiring layer has a first and second conductive layer laminated on it or whether the second wiring layer is a laminate of a first and second conductive layer. It is also not clear whether a portion of the second wiring layer wraps the third conductive layer or whether the third conductive layer is wrapped by the first

and second conductive layer. It is suggested that this limitation be amended so as to read as it did in the claims as originally presented.

Claims 31-33 and 38-40 are also rejected as they depend from claims 30 and 37 and thus contain the indefinite limitation of claims 30 and 37.

Further, claims 33 and 40 recite appropriately. It is not understood what is meant by this term and how it affects the meets and bounds of the claims. It is suggested that the term appropriately be removed from the claim.

Claims 47 and 48 are indefinite as they depend from a cancelled claim (claims 44 and 46) and thus one cannot determine the meets and bounds of the claims. It is suggested to change the dependency so that claims 47 and 48 no longer depend from claims 44 and 46.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 41 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (U.S. Patent No. 6225150 B1) in view of Vu et al. (U.S. Patent No. 5702963).

Lee et al. teach a semiconductor device having a pixel matrix circuit and a driver circuit formed on the same substrate in figure 3j and the accompanying description in

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the specification. As seen in figure 3j, Lee et al. teach a pixel TFT in the pixel matrix circuit and an n-channel TFT included in the driver circuit having an active layer and a first wiring line with an insulating layer there between. Lee et al. do not disclose the TFT's having an active layer sandwiched by a first wiring line and a second wiring line through insulating layers. Vu et al. teach high density TFT's to be used in LCD's. Vu et al. teach in figure 15G the TFT's having an active layer sandwiched by a first wiring line G1 and a second wiring line G2 through insulating layers.

The limitation of the first wiring line connected to the pixel TFT kept at a fixed electric potential or a floating electric potential and the first wiring line connected to the n-channel TFT included in the driver circuit kept at a same level of potential as the second wiring line connected to the n-channel TFT included in the driver circuit are intended use limitations that do not structurally distinguish over the prior art. The device of Lee et al. as combined with Vu et al. is capable of having the claimed electric potentials applied to the first and second wiring line and thus reads on the claim.

Lee et al. and Vu et al. are combinable because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to form the TFT's with a first and second wiring line sandwiching the active region through insulating layers. The motivation for doing so is increase the drive current of the transistors. Therefore, it would have been obvious to combine Lee et al. with Vu et al. to obtain the invention of claim 41.

With regard to claim 45, Lee et al. with Vu et al. teach the first or second wiring line is a conductive film mainly containing an element selected from the group

consisting of tantalum, titanium, tungsten, molybdenum, and silicon, or an alloy film or silicide film containing the elements in combination.

Allowable Subject Matter

7. Claims 28, 29, and 34-36 are allowed.
8. Claims 42 and 43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
9. The following is a statement of reasons for the indication of allowable subject matter: Prior art fails to teach, disclose, or suggest, either alone or in combination, a device including a CMOS circuit formed by an n-channel TFT and a p-channel TFT where an active layer is sandwiched by a first wiring line and a second wiring line through insulating layers in only the n-channel TFT, the active layer includes a low concentration impurity region, and the low concentration impurity region is formed to overlap the first wiring line and not the second wiring line. The prior art also fails to teach a pixel TFT that has an active layer sandwiched by a first and second wiring line where the active layer includes low concentration impurity regions that are overlapped by the first wiring line and not the second wiring line. Prior art also fails to teach the second wiring line having a portion of a laminated structure of a first conductive layer

and a second conductive layer and a portion in which a third conductive layer is wrapped by the first and second conductive layer.

Response to Arguments

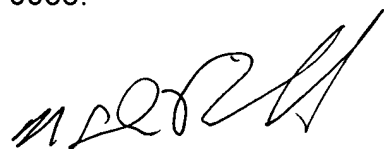
10. Applicant's arguments with respect to claims 28-43, 45, 47, and 48 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Drew Richards whose telephone number is (703) 306-5946. The examiner can normally be reached on M-F 8:00-5:30; Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



NDR
January 27, 2003



EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2003